

FIG. 1

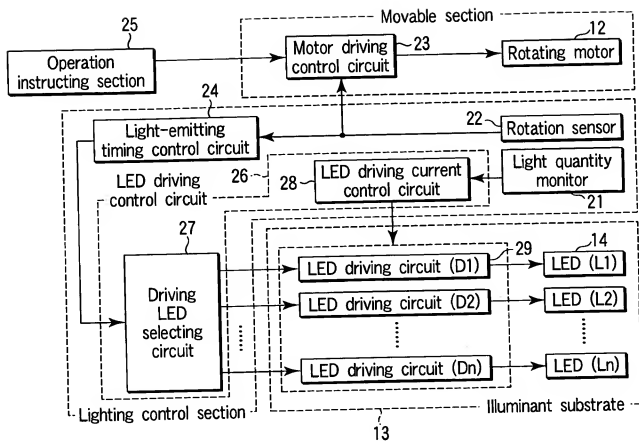


FIG. 2

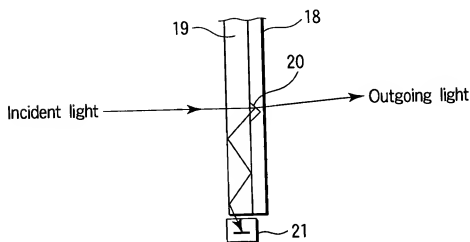
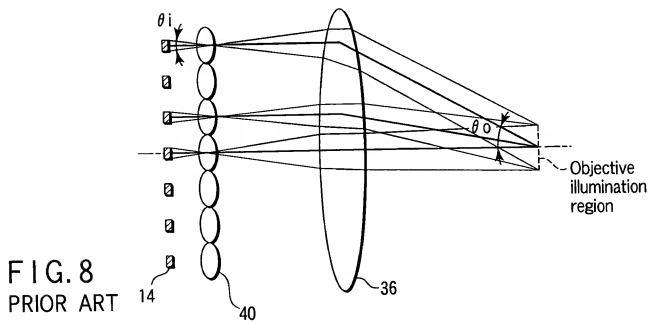
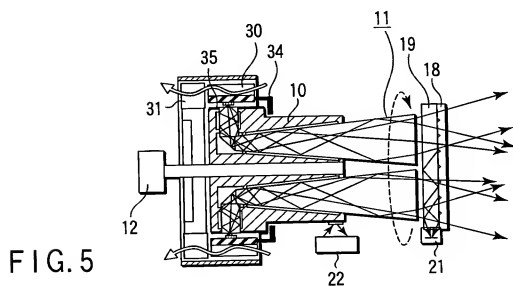
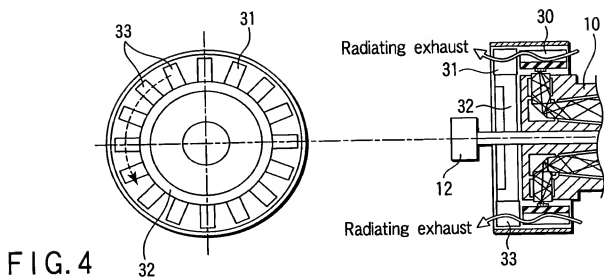


FIG. 3



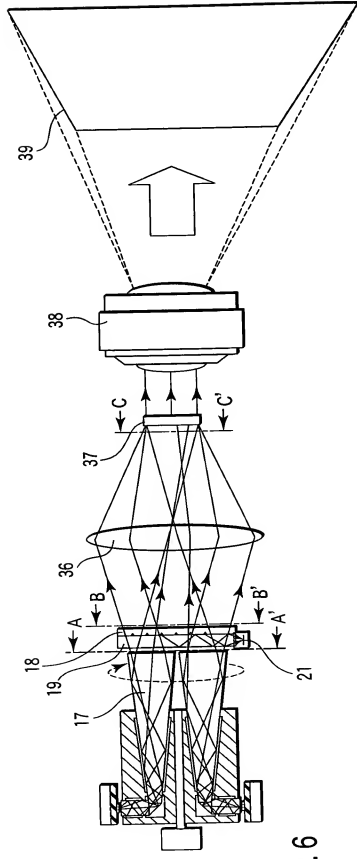


FIG. 6

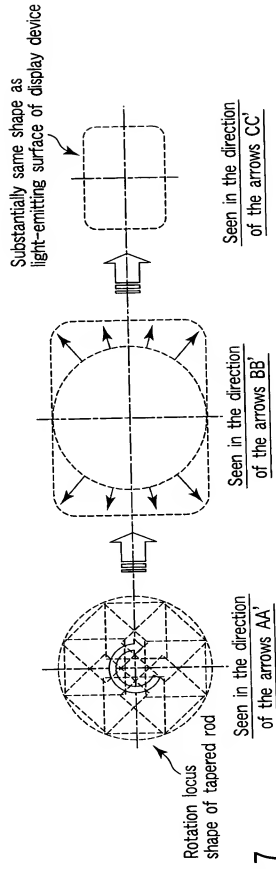


FIG. 7

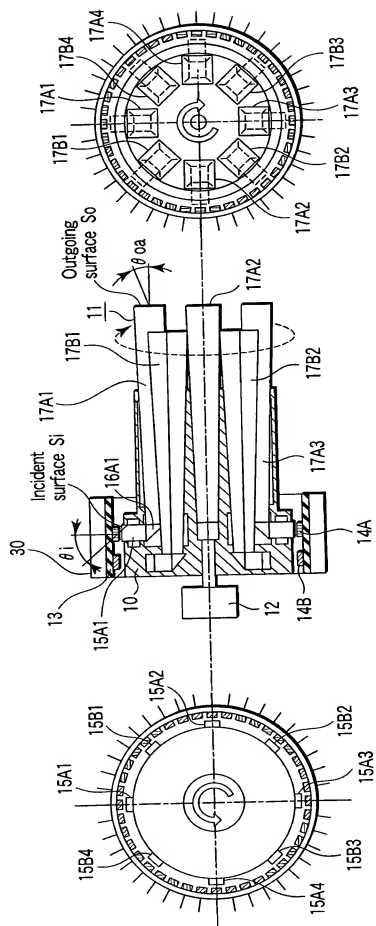
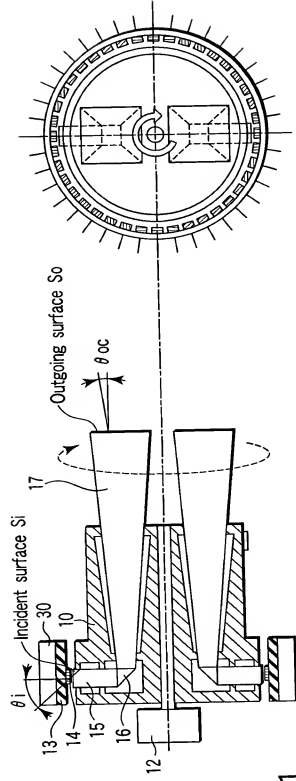
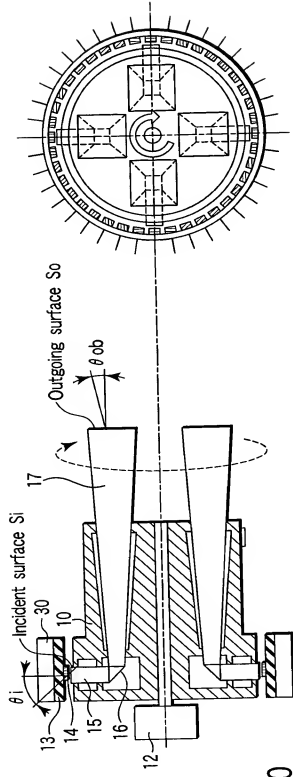


FIG. 9



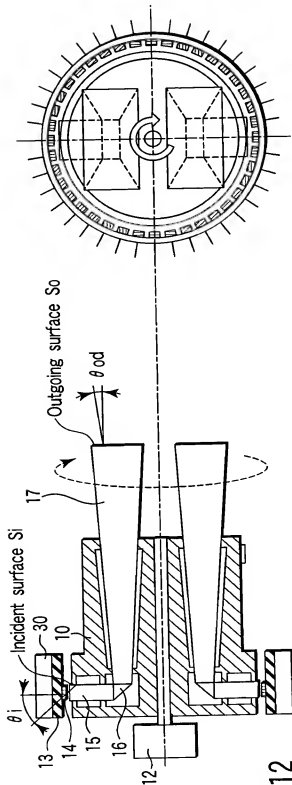


FIG. 12

Effective order (superior→poor)	Taken-out quantity of light	Efficiency for light utilization	NA conversion efficiency	Suppression for variation in quantity of light
①	Model A (FIG. 9)	Model D	Model C	Conventional model
②	Model D (FIG. 12)	Model C	Model D	Model D
③	Model B (FIG. 10)	Model B	Model B	Model C
④	Model C (FIG. 11)	Model A	Model A	Model B
⑤	Conventional model (FIG. 8)	Conventional model	Conventional model	Model A

FIG. 13

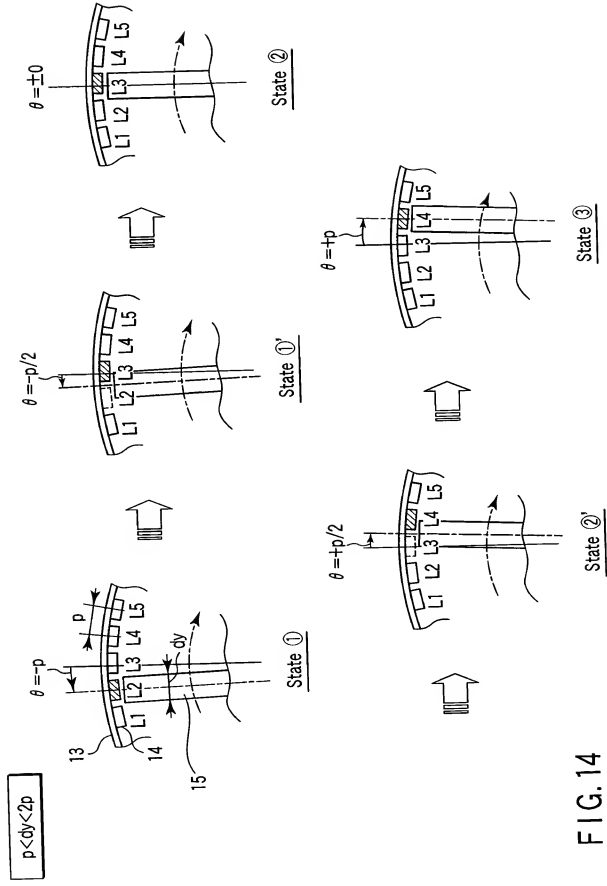


FIG. 14

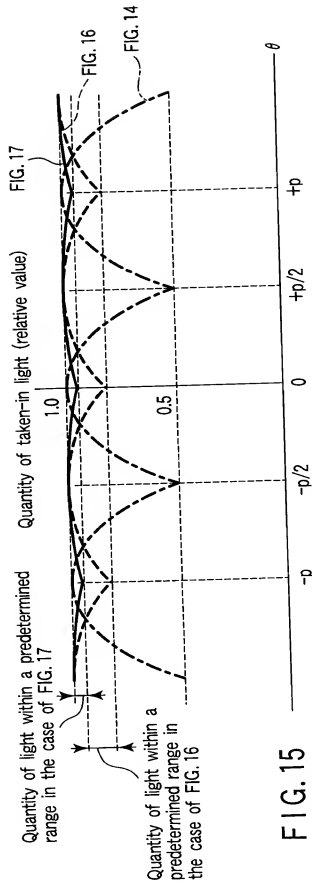


FIG. 15

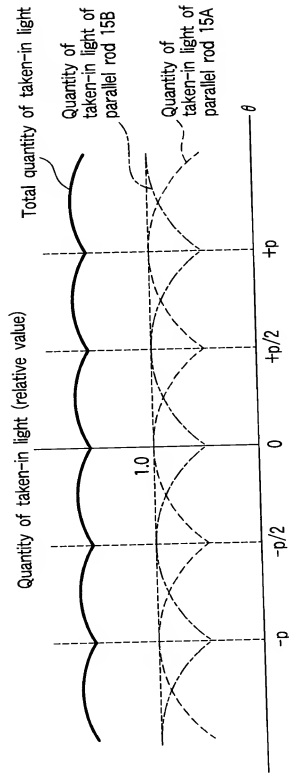


FIG. 19

$$2p \leq dy < 3p$$

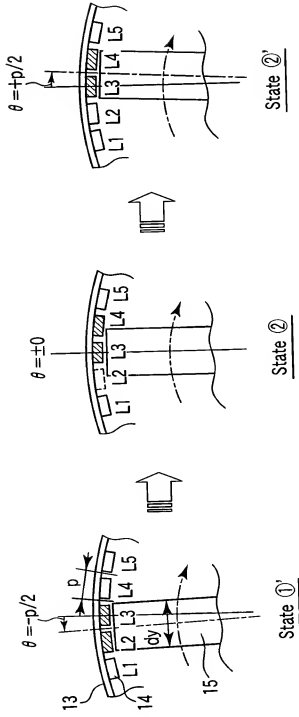


FIG. 16

$$3p \leq dy$$

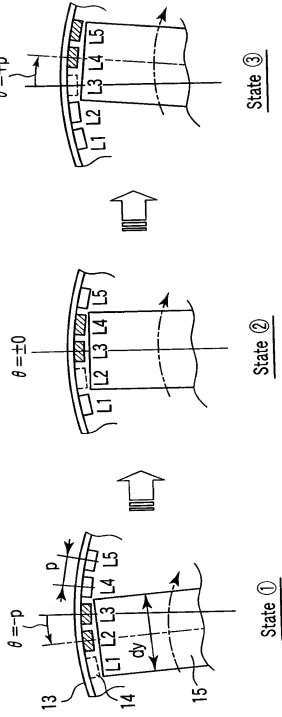


FIG. 17

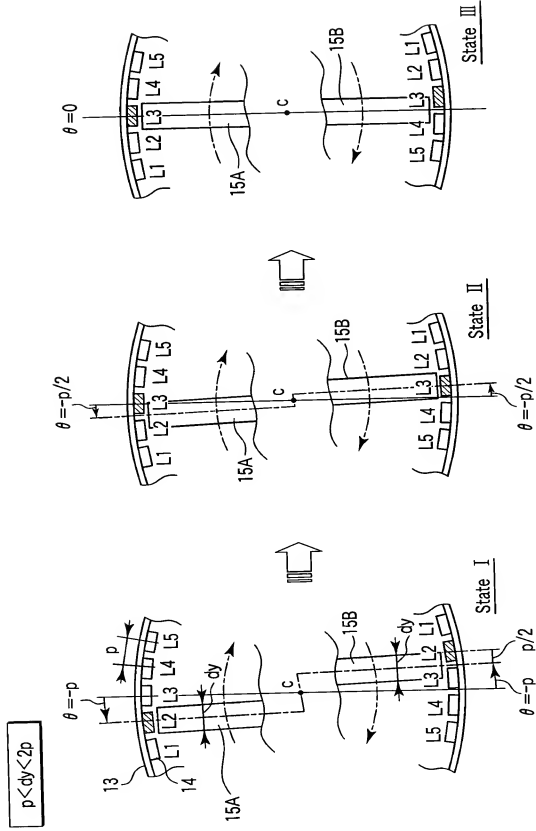


FIG. 18

$$p < dy < 2p$$

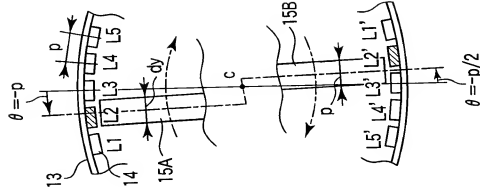
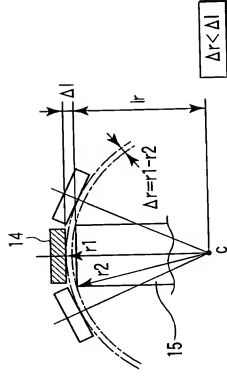


FIG. 20



$$\Delta r < \Delta l$$

FIG. 21

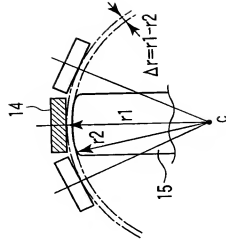


FIG. 22

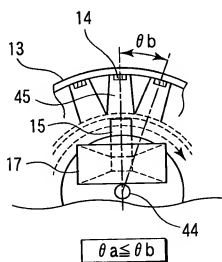
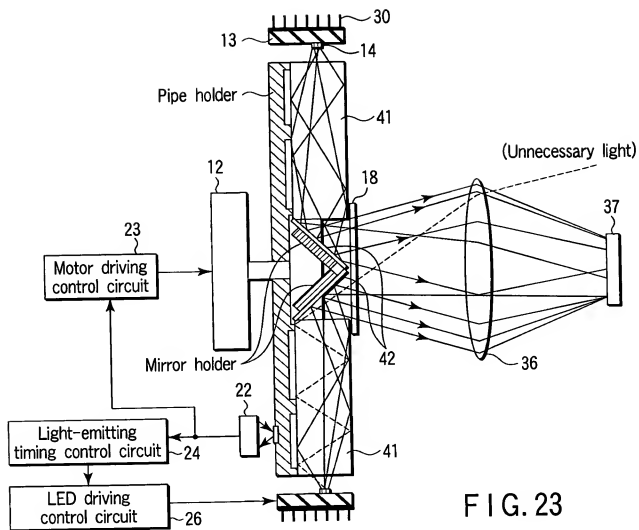


FIG. 25

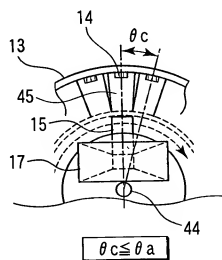


FIG. 26

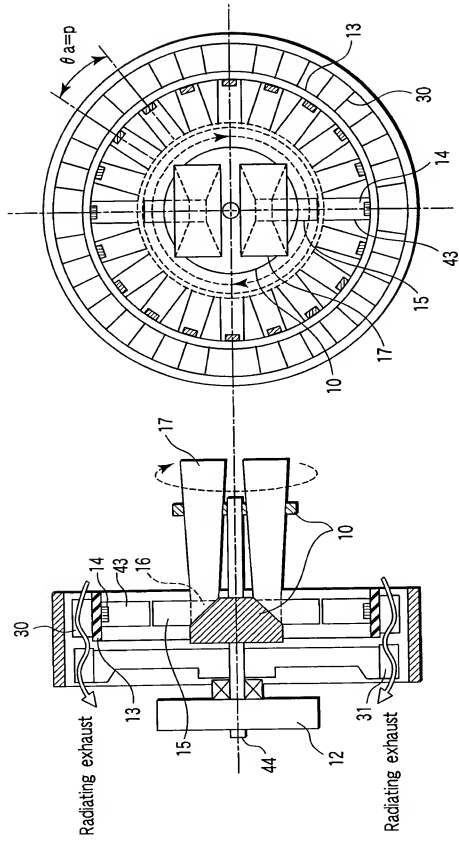


FIG. 24

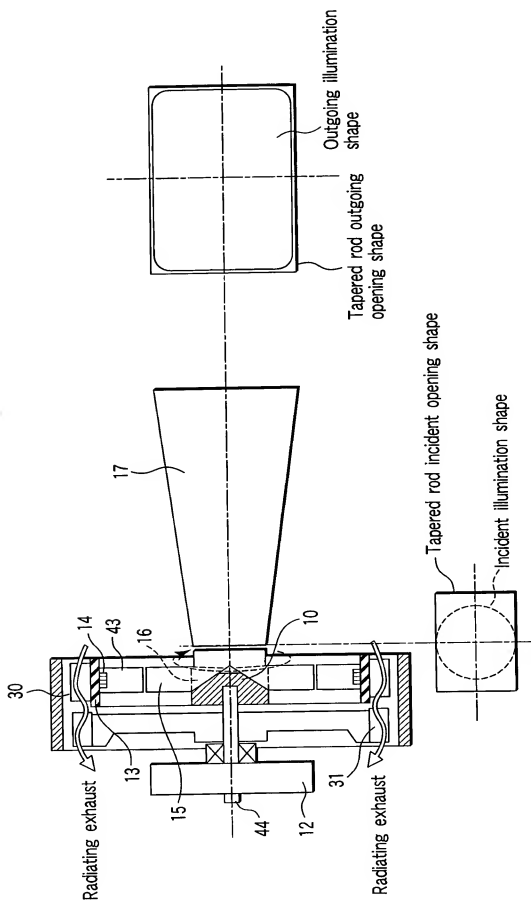
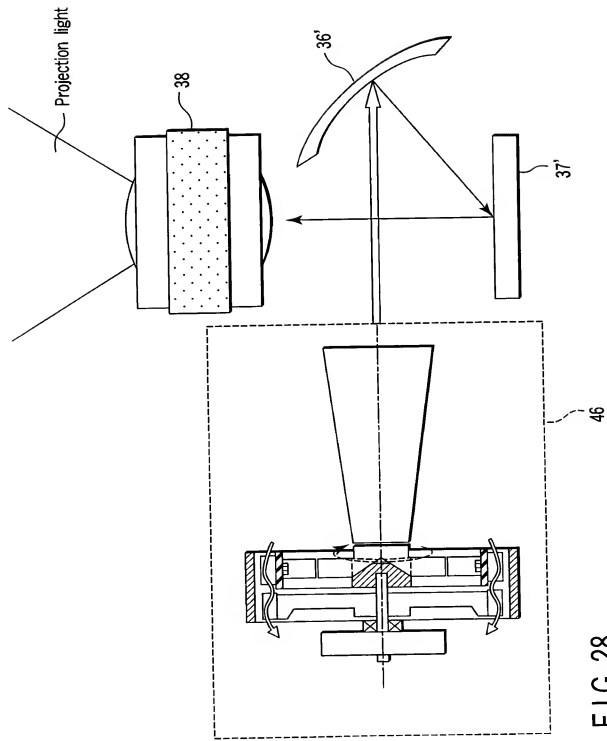


FIG. 27



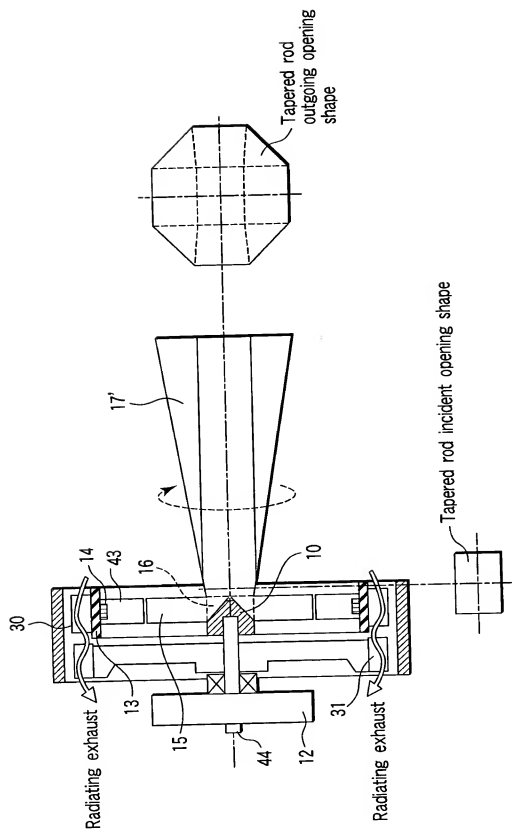


FIG. 29

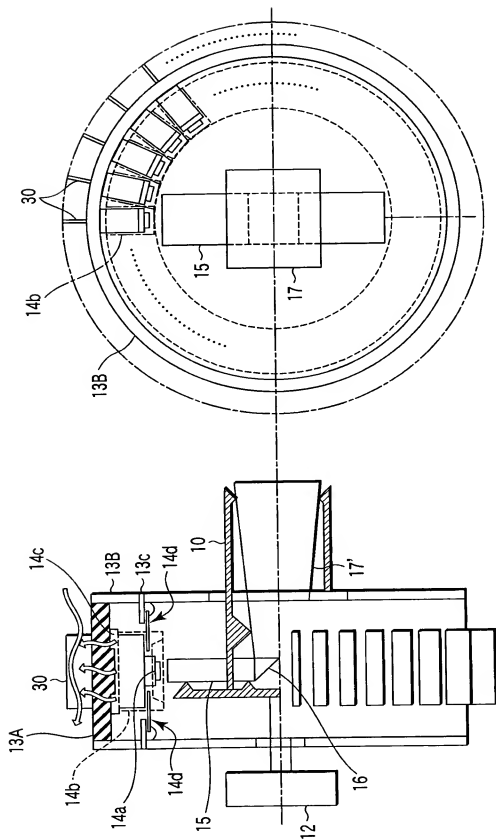


FIG. 30

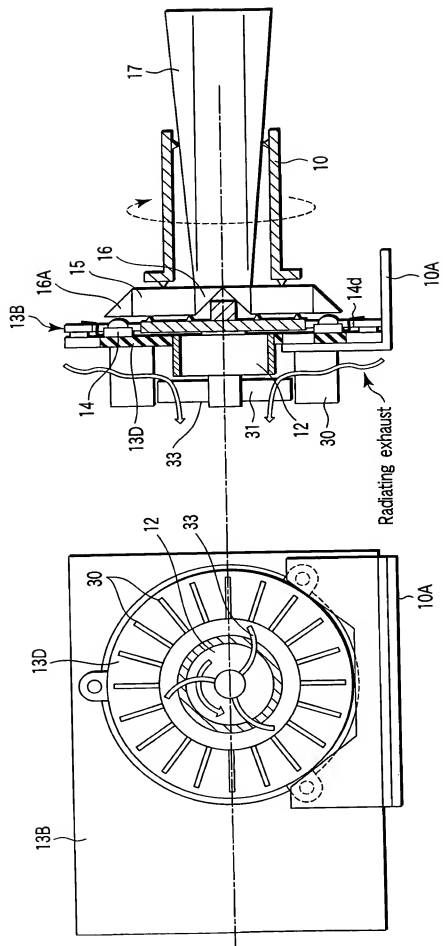


FIG. 31A

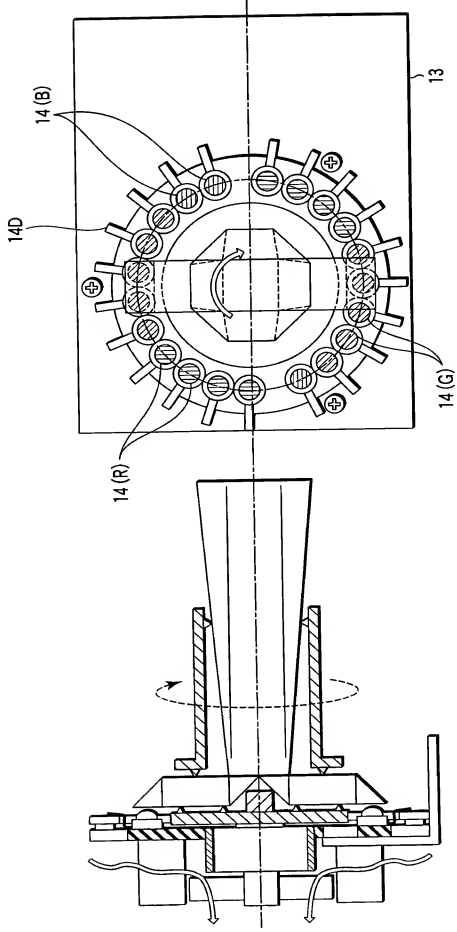


FIG. 31B

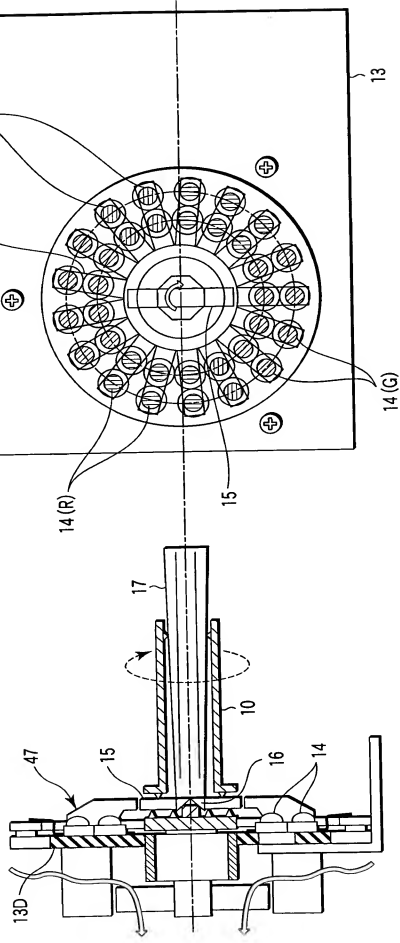


FIG. 32

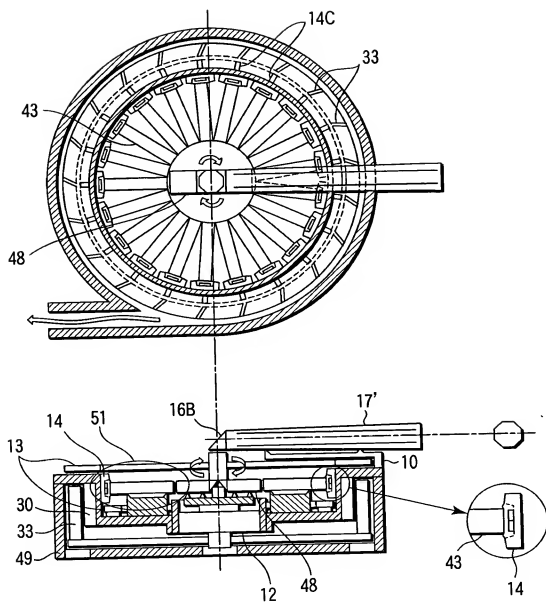


FIG. 33

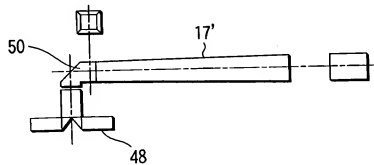


FIG. 34

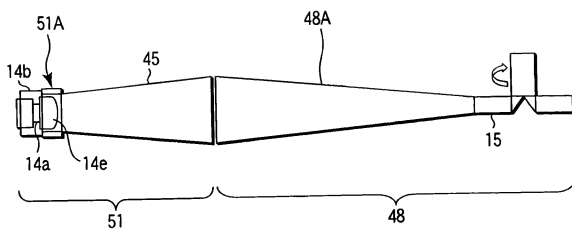


FIG. 35

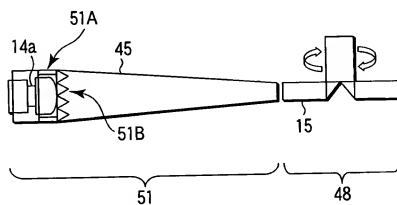


FIG. 36

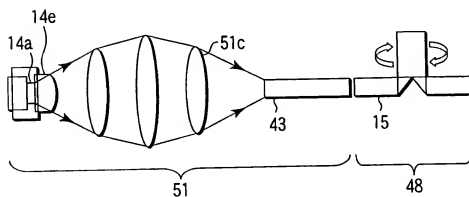


FIG. 37

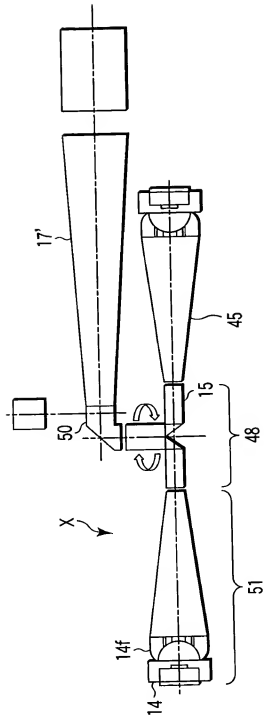


FIG. 38

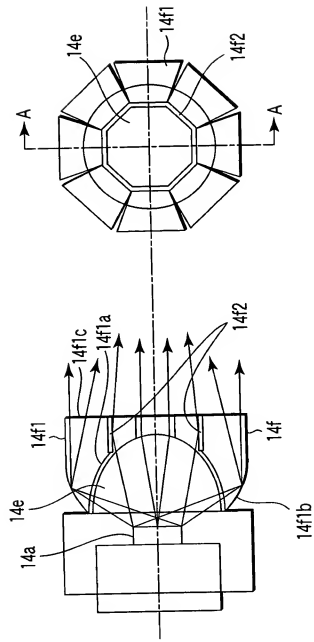


FIG. 39

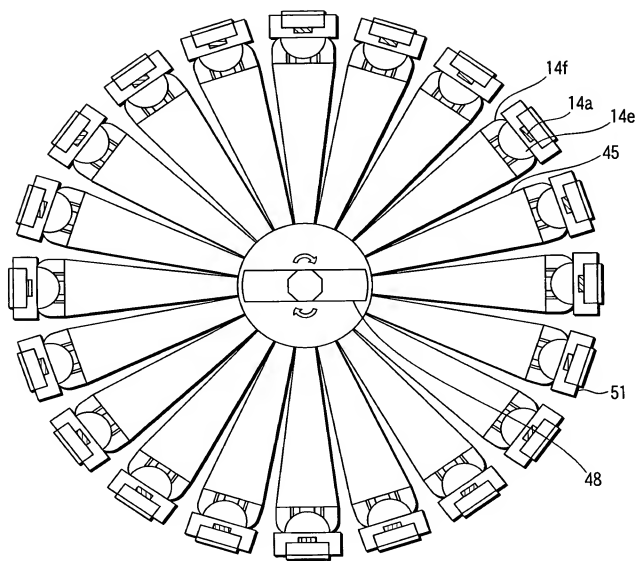


FIG. 40